



SET OF PAPERS  
ORIGINALLY FILED

Please replace the section entitled "Cross Reference to Related Applications" on page 1, beginning at line 11, with the following:

CROSS REFERENCE TO RELATED APPLICATIONS

This application relates to the following US patent applications, all commonly assigned to the assignee of this application.

A<sup>2</sup>

Serial No.	Atty. Dkt. No.	Title	Filed
09/676,147	2705-128	Fully Distributed, Scalable Infrastructure Communication System	9/29/00
09/711,378	2705-139	Replication of a Scalable Infrastructure System	11/9/00
09/695,750	2705-140	Object Agents in a Scalable Infrastructure System	10/24/00
09/746,798	2705-141	Memory Management of a Scalable Infrastructure System	12/20/00
09/694,740	2705-142	Interconnective Agents in a Scalable Infrastructure System	10/23/00
09/713,155	2705-143	Multicasting and Joining in a Scalable Infrastructure System	11/14/00
09/697,821	2705-144	Scalable Infrastructure Community Service	10/26/00
09/882,221	2705-187	Net Lurkers	6/15/01

Please replace the section titled "FIELD" page 1, line 15, with the following:

FIELD

A<sup>3</sup>

This invention pertains to object routing and, more particularly, to object routing in a Scalable Infrastructure system.

Please replace the paragraph starting on page 2, line 25, with the following paragraph:

A<sup>4</sup>

The Smart Secretary is an agent of the Scalable Infrastructure system designed to route objects according to a user's preferences. When the Scalable Infrastructure system notifies the Smart Secretary that an object exists in the space for the Smart Secretary, the Smart Secretary picks up the object. The Smart Secretary then determines for which user the object is

A<sup>4</sup>  
destined and accesses the user's preference settings. (A default preference setting specifies that the object is to be routed only according to the directions enclosed with the object.) The Smart Secretary then routes the object according to the user's preference settings, even if they override the specified destination included with the object.

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**Please replace the paragraph starting on page 3, line 8, with the following paragraph.**

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A<sup>5</sup>  
FIG. 2 shows a Scalable Infrastructure system in which a Smart Secretary according to the preferred embodiment of the invention can operate.

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**Please replace the paragraph starting on page 3, line 23, with the following paragraph.**

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A<sup>6</sup>  
In FIG. 1, computer system 105 is connected to network 130 via network connection 135. A Scalable Infrastructure system for use in distributed communication systems as described in U.S. Patent Application Serial No. 09/676,147, titled "Fully Distributed, Scalable Infrastructure, Communication System," filed September 29, 2000, operates over network 130. Smart Secretary, running on computer system 105, is part of the Scalable Infrastructure system. The following material is drawn from U.S. Patent Application Serial No. 09/676,147, titled "Fully Distributed, Scalable Infrastructure, Communication System," filed September 29, 2000:

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**Please replace the paragraph starting on page 3, line 30, with the following paragraph.**

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A<sup>7</sup>  
The Scalable Infrastructure system uses a combination of a persistent store and agents to provide a communication system extensible to nearly all types of interfaces and any number of users and applications. The Scalable Infrastructure system defines Communities around the persistent store, or

A<sup>7</sup>

space, with space or non-space oriented interpreters, referred to here as Double Agents. Double Agents will be discussed in more detail further.

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**Please replace the paragraph starting on page 4, line 3, with the following paragraph.**

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A<sup>8</sup>

A Community as used here will refer to a collection of these agents and a persistent store. Any type of persistent store could be used, with the capabilities of having objects inserted into the store such that they do not lose their attributes and of providing a notification service as the objects are inserted. In this particular example, JavaSpaces™ [technology] will be used as the persistent stores, but the Scalable Infrastructure system is applicable to any similar technology. For ease of discussion, the persistent stores will be referred to as "Spaces." Spaces can be used in several different implementations, and the following discussion is meant only as an example.

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**Please replace the paragraph starting on page 5, line 23, with the following paragraph.**

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A<sup>9</sup>

FIG. 2 shows a Scalable Infrastructure system in which a Smart Secretary according to the preferred embodiment of the invention can operate. In FIG. 2, Scalable Infrastructure system 205 includes two spaces, 210-1 and 210-2. However, a person skilled in the art will recognize that there can be more or fewer spaces in Scalable Infrastructure system 205. A smart secretary object 215 has been dropped in space 210-1 (perhaps by a Double Agent for a telephone: see FIG. 4). Scalable Infrastructure system 205 alerts Smart Secretary 220-1 that a smart secretary object has been dropped in space 210-1. In FIG. 2, the fact that object 215 is a smart secretary object is graphically represented by the arched shape of the object, designed to match cutout 225 of Smart Secretary 220-1, but a person skilled in the art will recognize that this is

A<sup>9</sup>  
simply a visual convenience. Smart Secretary 220-1 accesses smart secretary object 215 and determines (from the contents of smart secretary object 215) the user for which smart secretary object 215 is destined. Smart Secretary 220-1 then checks to see if registration entry 230 exists for the user for which the smart secretary object 215 is destined. If registration entry 230 exists, then Smart Secretary 220-1 accesses that user's preference setting 235 (if the user has not provided a preference setting, Smart Secretary 220-1 routes smart secretary object 215 using default routing). (Preference settings will be explained more with reference to FIG. 4 below.) Smart Secretary 220-1 can then route the communication wrapped in smart secretary object 215 according to the appropriate preference settings.

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**Please replace the paragraph starting on page 6, line 8, with the following paragraph.**

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A<sup>10</sup>  
A person skilled in the art will recognize that there can be more than one Smart Secretary in Scalable Infrastructure system 205. For example, in FIG. 2, there are three Smart Secretaries 220-1, 220-2, and 220-3. Any of these Smart Secretaries can receive the notice from Scalable Infrastructure system 205 of smart secretary object 215 and respond to it.

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**Please replace the paragraph starting on page 6, line 8, with the following paragraph.**

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A<sup>11</sup>  
Because Smart Secretary processes objects on behalf of sources, Smart Secretary is effectively an agent for the source. But Smart Secretary 220-1 is a part of the Scalable Infrastructure system and otherwise separate from any source that causes a smart secretary object to be dropped into space 210-1. The use of the term "agent" should not be considered to tie Smart Secretary to a particular object source.

**Please replace the paragraph starting on page 6, line 17, with the following paragraph.**

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A<sup>12</sup>

FIGs. 3A-3C shows a flowchart of the method used by the Smart Secretary of FIG. 2 for routing objects. At step 305, the Smart Secretary receives a notice from the Scalable Infrastructure system that a smart secretary object exists in the space. At step 310, the Smart Secretary accesses the smart secretary object from the space. At step 315, the Smart Secretary checks to see if the recipient is a registered user in the Scalable Infrastructure system. If the recipient is not registered, then at step 320 the object is routed using default routing (i.e., the object is sent to the specified destination without change). Otherwise, at step 325, the Smart Secretary checks to see how many possible routing destinations are included in the user preference settings. If only one routing destination is included in the user preference settings, then at step 330 the smart secretary object is routed to the listed destination. (The smart secretary wrapper is also removed from the object and the object is wrapped in the appropriate wrapper for the routing destination.)

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**Please replace the paragraph starting on page 6, line 29, with the following paragraph.**

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A<sup>13</sup>

If there is more than one possible destination for the object, then at step 335, the Smart Secretary checks to see how the object is to be routed through the destinations. If the object is to be routed using sequential delivery, at step 340, the routing destinations are ordered. The object loses its smart secretary wrapper and is wrapped with a sequence wrapper, which includes the ordered list of routing destinations. Then, at step 345, the sequence object is then dropped into the space for a sequence object to try to route the object to the destinations in order. Otherwise, if the object is to be broadcast to the destinations, then at step 350 the destinations are identified,

A<sup>13</sup>

and at step 355 a broadcast object is placed in the space to broadcast the object to the destinations. As with sequential routing, the object loses its smart secretary wrapper and is wrapped with a broadcast wrapper. Additional information about the broadcast agent can be found in U.S. Patent Application Serial No. 09/713,155, titled "Multicasting and Joining in a Scalable Infrastructure System," filed November 14, 2000.

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**Please replace the paragraph starting on page 7, line 9, with the following paragraph.**

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A<sup>14</sup>

Now that the operation of the Smart Secretary has been explained, its use can be described. FIG. 4 shows telephones and voicemail connected to Communities as in FIG. 2. In FIG. 4, a caller places a call from Internet protocol (IP) telephone 405. (Although FIG. 4 demonstrates the use of Smart Secretary in the context of telephonic communication, a person skilled in the art will recognize that Smart Secretary is extensible beyond telephonic communication: for example, computer communication across an internetwork, either local, wide-area, or global.) Double Agent 410 translates the data from IP telephone 405 into objects understandable by Scalable Infrastructure system 415-1 (such as Scalable Infrastructure system 205 of FIG. 2). The caller may be calling IP telephones 420 or 425 (IP telephones on the same Scalable Infrastructure system), IP telephone 430 (an IP telephone on a different Scalable Infrastructure system, such as Scalable Infrastructure system 415-2), or a regular telephone, such as telephone 435, accessible via private branch exchange (PBX) 440. Because they are part of Communities, Double Agent 445 and 450 interface between IP telephones 420 and 425, respectively and Scalable Infrastructure system 415-1; similarly,

A14

Double Agent 455 interfaces between IP telephone 430 and Scalable Infrastructure system 415-2.

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**Please replace the paragraph starting on page 7, line 24, with the following paragraph.**

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A15

For purposes of FIG. 4, assume that the called telephone is IP telephone 420. When the user dials IP telephone 420 from IP telephone 405, Double Agent 410 drops a smart secretary object in the space within Scalable Infrastructure system 415-1. The smart secretary object (naturally) includes the dialed telephone number, which the Smart Secretary uses to determine the intended recipient. After determining the intended recipient, the Smart Secretary accesses the callee's preference settings.

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**Please replace the paragraph starting on page 8, line 12, with the following paragraph.**

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A16

If the manager works out of multiple offices, he can set his preferences to ring each of his phones in turn, until someone picks up. So, in the above example, if the manager alternates between IP telephones 420 and 430 (for example, IP telephone 420 in Los Angeles and IP telephone 430 in New York City), IP telephone 420 can be set to ring first, then IP telephone 430, then the manager's assistant's IP telephone 425, and finally voicemail 460, until someone takes the call. Note that the fact that IP telephones 420, 430, and 425 are part of different Communities does not affect the preference setting: transfer of a call between Communities 415-1 and 415-2 is handled seamlessly. See related U.S. Patent Application Serial No. 09/694,740, titled "Interconnective Agents in a Scalable Infrastructure System," filed October 23, 2000, for more information about transferring communications between Communities.

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